DRAFT FINAL
EXPANDED ENGINEERING EVALUATION/COST ANALYSIS (EEE/CA)
FOR THE
McLAREN TAILINGS SITE
COOKE CITY, MONTANA

Engineering Services Agreement DEQ/MWCB 401027
Task Order Number 05

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APPENDIX E

DESCRIPTION OF FEDERAL AND STATE ARARS

INTRODUCTION

Section 121(d) of CERCLA, 42 U.S.C. § 9621(d), certain provisions of the current National Contingency Plan (the NCP), 40 CFR Part 300 (1990), and guidance and policy issued by the Environmental Protection Agency (EPA) require that remedial actions taken pursuant to CERCLA authority shall require or achieve compliance with substantive provisions of applicable or relevant and appropriate standards, requirements, criteria, or limitations from state environmental and facility siting laws, and from federal environmental laws at the completion of the remedial action, and/or during the implementation of the remedial action, unless a waiver is granted. These requirements are threshold standards that any selected remedy must meet. See Section 121(d)(4) of CERCLA, 42 U.S.C. § 9621(d)(4); 40 CFR § 300.430(f)(1). EPA calls standards, requirements, criteria, or limitations identified pursuant to section 121(d) "ARARs," or applicable or relevant and appropriate requirements.

ARARs are either applicable or relevant and appropriate. Applicable requirements are those standards, requirements, criteria, or limitations promulgated under federal or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance found at a CERCLA site. Relevant and appropriate requirements are those standards, requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to hazardous substances, pollutants, contaminants, remedial actions, locations, or other circumstances found at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site such that their use is well suited to the particular site. Factors which may be considered in making this determination are presented in 40 CFR § 300.400(g)(2). Compliance with both applicable and relevant and appropriate requirements is mandatory.

Each ARAR or group of related ARARs identified here is followed by a specific statutory or regulatory citation, a classification describing whether the ARAR is applicable or relevant and appropriate, and a description which summarizes the requirements, and addresses how and when compliance with the ARAR will be measured (some ARARs will govern the conduct of the remedial action, some will define the measure of success of the remedial action, and some will do both). The descriptions given here are provided to allow the user a reasonable understanding of the requirements without having to refer constantly to the statute or regulation itself. However, in the event of any inconsistency between the law and the summary provided in this document, the applicable or relevant and appropriate requirement is ultimately the requirement as set out in the law, rather than any paraphrase of the law provided here.

Finally, this list contains a non-exhaustive list of other legal provisions or requirements which should be complied with. ARARs are divided into contaminant specific, location specific, and action specific requirements, as described in the NCP and EPA guidance. For contaminant specific ARARs, ARARs are listed according to the appropriate media.

Contaminant specific ARARs include those laws and regulations governing the release to the environment of materials possessing certain chemical or physical characteristics or containing specific chemical compounds. Contaminant specific ARARs generally set health or risk based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment.

Location specific ARARs are restrictions placed on the concentration of hazardous substances or the conduct of cleanup activities because they are in specific locations. Location specific ARARs relate to the geographic or physical position of the site, rather than to the nature of the site contaminants.

Action specific ARARs are usually technology or activity based requirements or limitations on actions taken with respect to hazardous substances.

Many requirements listed here are promulgated as identical or nearly identical requirements in both federal and state law, usually pursuant to delegated environmental programs administered by EPA and the states, such as the requirements of the federal Clean Water Act and the Montana Water Quality Act. The preamble to the new NCP states that such a situation results in citation to the state provision as the appropriate standard, but treatment of the provision as a federal requirement. ARARs and other laws which are unique to state law are identified separately by the State of Montana.

FEDERAL ARARS

1. FEDERAL CONTAMINANT SPECIFIC REQUIREMENTS

a. Groundwater Standards - Safe Drinking Water Act (Relevant and Appropriate)[1]

The National Primary Drinking Water Standards (40 CFR Part 141), better known as maximum contaminant levels and maximum contaminant level goals (MCLs and MCLGs), are applicable to the McLaren Tailings Site area because the aquifer underlying the area is a current public water system, as defined in the Safe Drinking Water Act, 42 U.S.C. § 300f(4). Groundwater use through private wells occurs in the area, and some of the groundwater in the area is a current source of drinking water.

Standards such as the MCL and MCLG standards are promulgated pursuant to both federal and state law. Under the Safe Drinking Water Act, EPA has granted the State of Montana primacy in implementation and enforcement of the Safe Drinking Water Act. Nevertheless, both federal and state promulgated standards are potential ARARs for the McLaren Tailings Site. Here, for ease of reference, for the primary contaminants of concern the more stringent of federal or state standards are listed, unless identical, in which case both standards are identified. Thus, the numerical standards identified by the State, which are applicable standards, are duplicated here where equivalent or more stringent.

Chemical	MCLG	MCL
Antimony	0.006 mg/l[2]	0.006 mg/l[3]
Arsenic	N.A.[4]	0.05 milligrams per liter (mg/l)[5]
Cadmium	0.005 mg/l[6]	0.005 mg/l[7]

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1 42 U.S.C. Sections 300f et seq.

2 40 CFR § 141.51.

3 40 CFR § 141.62.

4 An MCLG and a revised MCL for arsenic may be promulgated by EPA in the near future. If promulgated prior to issuance of a decision document for the McLaren Tailings Site, these standards will be incorporated.

5 40 CFR § 141.11.

6 40 CFR § 141.51

7 40 CFR § 141.62.

Chemical	MCLG	MCL
Copper	1.3 mg/l[8]	1.3 mg/l[9]
Lead	N.A.[10]	0.015 mg/l[11]
Mercury	0.002 mg/l[12]	0.002 mg/l[13]

These standards incorporate applicable Resource Conversation and Recovery Act (RCRA) standards for groundwater found at 40 CFR Part 264, Subpart F, which is incorporated pursuant to state law at ARM 17.54.702 The RCRA standards are the same or less stringent than the MCLs or MCLGs identified above.

b. Air Standards - Clean Air Act (Applicable)

Limitations on air emissions resulting from cleanup activities or emissions resulting from wind erosion of exposed hazardous substances are set forth in the action specific requirements, below.

2. FEDERAL LOCATION SPECIFIC REQUIREMENTS

a. Fish and Wildlife Coordination Act (Applicable)

These standards are found at 16 U.S.C. §§ 1531 - 1566 and 40 CFR § 6.302(g). They require that federally funded or authorized projects ensure that any modification of any stream or other water body affected by a funded or authorized action provide for adequate protection of fish and wildlife resources. Compliance with this ARAR necessitates consultation with the U.S. Fish and Wildlife Service (USFWS) and the State of Montana Department of Fish, Wildlife, and Parks. Further consultation with these agencies will occur during cleanup selection and implementation, and specific mitigative or other measures may be identified to achieve compliance with this ARAR.

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[8] 40 CFR § 141.51

[9] 40 CFR § 141.80(c). The requirement is an action level rather than a simple numerical standard.

[10] The MCLG for lead is zero, which is not considered appropriate for Superfund site cleanups.

[11] 40 CFR § 141.80(c), which establishes an action level rather than a pure numerical standard.

[12] 40 CFR § 141.51.

[13] 40 CFR § 141.62.

b. Floodplain Management Order (Applicable)

This requirement (40 CFR Part 6, Appendix A, Executive Order No. 11,988) mandates that federally funded or authorized actions within the 100 year flood plain avoid, to the maximum extent possible, adverse impacts associated with development of a floodplain. Compliance with this requirement is detailed in EPA's August 6, 1985 "Policy on Floodplains and Wetlands Assessments for CERCLA Actions." Specific measures to minimize adverse impacts may be identified following consultation with the appropriate agencies.

If the removal action selected for the McLaren Tailings Site is found to potentially affect the floodplain, the following information will be produced: a Statement of Findings which will set forth the reasons why the proposed action must be located in or affect the floodplain; a description of significant facts considered in making the decisions to locate in or affect the floodplain or wetlands including alternative sites or actions; a statement indicating whether the selected action conforms to applicable state or local floodplain protection standards; a description of the steps to be taken to design or modify the proposed action to minimize the potential harm to or within the floodplain; and a statement indicating how the proposed action affects the natural or beneficial values of the floodplain.

c. Protection of Wetlands Order (Relevant and Appropriate)

This requirement (40 CFR Part 6, Appendix A, Executive Order No. 11,990) mandates that federal agencies and potentially responsible parties (PRPs) avoid, to the extent possible, the adverse impacts associated with the destruction or loss of wetlands and to avoid support of new construction in wetlands if a practicable alternative exists. Section 404(b)(1), 33 U.S.C. § 1344(b)(1), also prohibits the discharge of dredged or fill material into waters of the United States. Together, these requirements create a "no net loss" of wetlands standard. If wetlands are found to be potentially affected by the McLaren Tailings Site reclamation, this ARAR would be applicable.

d. The Endangered Species Act (Applicable)

This statute and implementing regulations (16 U.S.C. §§ 1531 - 1543, 50 CFR Part 402, and 40 CFR § 6.302(h)) require that any federal activity or federally authorized activity may not jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify a critical habitat. The area around the McLaren Tailings Site is known to harbor endangered and threatened species such as the Bald Eagle, Grizzly Bear, Peregrine Falcon and Gray Wolf.

Compliance with this requirement involves consultation with USFWS, and a determination of whether there are listed or proposed species or critical habitats present at the site, and, if so, whether any proposed activities will impact such wildlife or habitat.

e. The National Historic Preservation Act (Applicable)

This statute and implementing regulations (16 U.S.C. § 470, 40 CFR § 6.310(b), 36 CFR Part 800) require federal agencies or federal projects to take into account the effect of any federally assisted undertaking or licensing on any district, site building, structure, or object that is included in, or eligible for, the Register of Historic Places. If effects cannot be avoided reasonably, measures should be implemented to minimize or mitigate the potential effect. In order to comply with this ARAR, EPA and DEQ may consult with the State Historic Preservation Officer (SHPO), who can assist in identifying listed or eligible resources, and in assessing whether proposed cleanup actions will impact the resources and any appropriate mitigative measures.

f. Archaeological and Historic Preservation Act (Applicable)

The statute and implementing regulations (16 U.S.C. § 469, 40 CFR § 6.301(c)) establish requirements for evaluation and preservation of historical and archaeological data, which may be destroyed through alteration of terrain as a result of federal construction projects or a federally licensed activity or program. If eligible scientific, prehistorical, or archaeological artifacts are discovered during site activities, they must be preserved in accordance with these requirements.

g. Historic Sites, Buildings, and Antiquities Act (Applicable)

This requirement states that "in conducting an environmental review of a proposed EPA action, the responsible official shall consider the existence and location of natural landmarks using information provided by the National Park Service pursuant to 36 CFR § 62.6(d) to avoid undesirable impacts upon such landmarks. The Programmatic Agreement activities described above should aid all parties in compliance with this ARAR.

h. Migratory Bird Treaty Act (Applicable)

This requirement (16 U.S.C. §§ 703 et seq.) establishes a federal responsibility for the protection of the international migratory bird resource and requires continued consultation with the USFWS during remedial design and remedial construction to ensure that the cleanup of the site does not unnecessarily impact migratory birds. Specific mitigative measures may be identified for compliance with this requirement.

i. Bald Eagle Protection Act (Applicable)

This requirement (16 U.S.C. §§ 668 et seq.) establishes a federal responsibility for protection of bald and golden eagles, and requires continued consultation with the USFWS during remedial design and remedial construction to ensure that any cleanup of the site does not unnecessarily adversely affect the bald and golden eagle. Specific mitigative measures may be identified for compliance with this requirement. The area including the McLaren Tailings Site harbors the Bald Eagle.

j. Resource Conservation and Recovery Act (Relevant and Appropriate)

Any discrete waste units created or retained by the McLaren Tailings Site cleanup must comply with the siting restrictions and conditions found at 40 CFR § 264.18(a) and (b). These sections require that waste repositories must not be located in seismic impact zones or in a 100 year flood plain. The repository planned for the Site is not indicated as being in a 100 year floodplain.

3. FEDERAL ACTION SPECIFIC REQUIREMENTS

a. Solid Waste (Applicable), Surface Mining Control and Reclamation (Applicable), and RCRA (Relevant and Appropriate) Requirements

The contamination at the McLaren Tailings Site is primarily mining waste from various man-made sources. This waste may not be RCRA hazardous waste, although EPA reserves its rights to make a more formal determination in this regard at a later date. For any management (i.e., treatment, storage, or disposal) or removal or retention of that contamination, the following requirements are ARARs.

1. Requirements described at 40 CFR §§ 257.3-1(a), 257.3-3, and 257.3-4, governing waste handling, storage, and disposal, including retention of the waste, in general[14].

2. For any discrete waste units which are addressed by the McLaren Tailings Site cleanup, reclamation and closure regulations found at 30 CFR Parts 816 and 784, governing coal and to a lesser extent, non-coal mining, are applicable requirements.[15]

3. RCRA regulations found at 40 CFR §§ 264.116 and .119 (governing notice and deed restrictions), 264.228(a)(2)(i) (addressing de-watering of wastes prior to disposal), and 264.228(a)(2)(iii)(B), (C), and (D) and .251(c), (d), and (f) (regarding run-on and run-off controls), are relevant and appropriate requirements for the any waste management units created or retained at the McLaren Tailings Site.

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[14] Solid Waste regulations are promulgated pursuant to the federal Solid Waste Disposal Act, as amended by the Resource Conversation and Recovery Act, 42 U.S.C. 6901 et seq. They are applicable regulations, although the State of Montana has the lead role in regulating solid waste disposal in the State of Montana. These regulations are also applicable to the hazardous waste described in the section above.

[15] The Surface Mining Control and Reclamation Act is promulgated at 30 U.S.C. Sections 1201 - 1326.

b. Air Standards - Clean Air Act (Applicable)

These standards, promulgated pursuant to section 109 of the Clean Air Act,[16] are applicable to releases into the air from any McLaren Tailings Site cleanup activities.

i. Lead: No person shall cause or contribute to concentrations of lead in the ambient air which exceed 1.5 micrograms per cubic meter ($\mu g/m^3$) of air, measured over a 90-day average.

These standards are promulgated at ARM 16.8.815 as part of a federally approved State Implementation Plan (SIP), pursuant to the Clean Air Act of Montana, §§ 75-2-101 et seq., MCA. Corresponding federal regulations are found at 40 CFR § 50.12.

ii. Particulate matter that is 10 microns in diameter or smaller (PM-10): No person shall cause or contribute to concentrations of PM-10 in the ambient air which exceed:

- 150 $\mu g/m^3$ of air, 24 hour average, no more than one expected exceedance per calendar year;

- 50 $\mu g/m^3$ of air, annual average.

These regulations are promulgated at ARM 17.8.223 as part of a federally approved SIP, pursuant to the Clean Air Act of Montana, §§ 75-2-101 et seq., MCA. Corresponding federal regulations are found at 40 CFR § 50.6.

Ambient air standards under section 109 of the Clean Air Act are also promulgated for carbon monoxide, hydrogen sulfide, nitrogen dioxide, sulfur dioxide, and ozone. If emissions of these compounds were to occur at the site in connection with any cleanup action, these standards would also be applicable. See ARM 17.8.212 and 40 CFR Part 50.

c. Dredge and Fill Requirements (Applicable)

Regulations found at 40 CFR Part 230 address conditions or prohibitions against depositing dredge and fill material into water of the United States. If remediation activities would result in an activity subject to these regulations, they would be applicable.

d. Underground Injection Control (Applicable)

Requirements found at 40 CFR Part 144, promulgated pursuant to the Safe Drinking Water Act, allow the re-injection of treated groundwater into the same formation from which it was

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[16] 42 U.S.C. §§ 7401 et seq.

withdrawn for aquifers such as the aquifer beneath the McLaren Tailings Site, and addresses injection well construction, operation, maintenance, and capping/closure. These regulations would be applicable to any reinjection of treated groundwater.

e. Transportation of Hazardous or Contaminated Waste (Relevant and Appropriate)

40 CFR Part 263 establishes regulations for the transportation of hazardous waste. These regulations would govern any on-site transportation of material. Any off-site transportation would be subject to applicable regulations.

STATE OF MONTANA ARARS

4. MONTANA CONTAMINANT SPECIFIC REQUIREMENTS

a. Water Quality

i. Surface Water Quality Standards (Applicable)

Under the state Water Quality Act, §§ 75-5-101 et seq., MCA, the state has promulgated regulations to protect, maintain, and improve the quality of surface waters in the state. The requirements listed below are applicable water quality standards with which any remedial action must comply. The State of Montana has designated surface water in the area of the McLaren Tailings Site classification B-1. Soda Butte Creek, which traverses the Site, is classified as B-1 but also is listed as impaired.

According to ARM 17.30.1310(3), MPDES permits are not necessary for any discharge that complies with the instructions of an on-scene coordinator pursuant to the NCP (40 CFR Part 300 et. seq.). This exemption is identical to the federal exemption for NPDES permits. See 40 CFR section 122.3(d). The on-scene coordinator is the government official designated by the lead agency to coordinate and direct removal actions under the National Contingency Plan (NCP), subpart E. 40 CFR section 300.5. Removal actions include containment of hazardous substances from water and shorelines and taking other actions necessary to minimize or mitigate damage to public health or welfare or the environment. 40 CFR section 300.5 Removal also means cleaning up or removing hazardous substance releases from the environment, monitoring, assessing and evaluating releases or threats thereof, disposal of removed material, or other actions necessary to minimize or mitigate damage to public health or welfare or the environment.

For the primary contaminants of concern, the WQB-7 levels are listed below. WQB-7 (Applicable) provides that "whenever both Aquatic Life Standards and Human Health Standards exist for the same analyte, the more restrictive of these values will be used as the numeric Surface Water Quality Standard."

Chemical	Human Health Standard for Surface Water (ug/L)	Aquatic Life Standard for Surface Water (ug/L)	
		Acute	Chronic
Antimony	6	None	None
Arsenic	18	340	150
Barium	2000	None	None
Cadmium	5	1.05 @ 50 mg/L hardness	0.16 @ 50 mg/L hardness
Copper	1,300	7.3 @ 50 mg/L hardness	5.2 @ 50 mg/L hardness
Iron	300	None	1,000
Lead	15	82 @ 100 mg/L hardness	3.2 @ 100 mg/L hardness
Mercury	0.05	1.7	0.91
Manganese	50	None	None
Zinc	2,000	67 @ 50 mg/L hardness	67 @ 50 mg/L hardness

Additional restrictions on any discharge to surface waters are included in:

ARM 17.30.637 (Applicable), which prohibits discharges containing substances that will:

(a) settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines;
(b) create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 milligrams per liter) or globules of grease or other floating materials;
(c) produce odors, colors or other conditions which create a nuisance or render undesirable tastes to fish flesh or make fish inedible;
(d) create concentrations or combinations of materials which are toxic or harmful to human, animal, plant or aquatic life;
(e) create conditions which produce undesirable aquatic life.

ii. Groundwater Pollution Control System (Applicable)

In addition to the standards set forth below, relevant and appropriate MCLs and MCLGs are included in the federal ARARs identified above.

ARM 17.30.1002 (Applicable) classifies groundwater into Classes I through IV based on the present and future most beneficial uses of the groundwater, and states that groundwater is to be classified according to actual quality or actual use, whichever places the groundwater in a higher class. Class I is the highest quality class; class IV the lowest.

ARM 17.30.1003 (Applicable) establishes the groundwater quality standards applicable with respect to each groundwater classification. Concentrations of dissolved substances in Class I or II groundwater (or Class III groundwater which is used as a drinking water source) may not exceed the human health standards listed in department Circular WQB-7. For the primary contaminants of concern these levels are listed above.

Concentrations of other dissolved or suspended substances must not exceed levels that render the waters harmful, detrimental or injurious to public health. Maximum allowable concentration of these substances also must not exceed acute or chronic problem levels that would adversely affect existing or designated beneficial uses of groundwater of that classification. ARM 17.30.1003 specifies certain references that may be used as a guide in determining problem levels unless local conditions make these values inappropriate.

An additional concern with respect to ARARs for groundwater is the impact of groundwater upon the surface water. If significant loadings of contaminants from groundwater sources to surface water contribute to the inability of the stream to meet the classification standards, then alternatives to alleviate such groundwater loading must be evaluated and, if appropriate, implemented.

b. Air Quality

In addition to the standards identified in the federal action specific ARARs above, the State of Montana has identified certain air quality standards in the action-specific section of the State ARARs below.

5. MONTANA LOCATION SPECIFIC REQUIREMENTS

a. Solid Waste Management Regulations (Applicable)

Regulations promulgated under the Solid Waste Management Act, §§ 75-10-201 et seq., MCA, specify requirements that apply to the location of any solid waste management facility. Under ARM 17.50.505 (Applicable), a facility for the treatment, storage or disposal of solid wastes:

(a) must be located where a sufficient acreage of suitable land is available for solid waste management;

(b) may not be located in a 100-year floodplain;

(c) may be located only in areas which will prevent the pollution of ground and surface waters and public and private water supply systems;

(d) must be located to allow for reclamation and reuse of the land;

(e) drainage structures must be installed where necessary to prevent surface runoff from entering waste management areas; and

(f) where underlying geological formations contain rock fractures or fissures which may lead to pollution of the ground water or areas in which springs exist that are hydraulically connected to a proposed disposal facility, only Class III disposal facilities may be approved.

Even Class III landfills may not be located on the banks of or in a live or intermittent stream or water saturated areas, such as marshes or deep gravel pits which contain exposed ground water. ARM 17.50.505(2)(j).

In addition, § 75-10-212 (Applicable) prohibits dumping or leaving any debris or refuse upon or within 200 yards of any highway, road, street, or alley of the State or other public property, or on privately owned property where hunting, fishing, or other recreation is permitted. However, the restriction relating to privately owned property does not apply to the owner, his agents, or those disposing of debris or refuse with the owner's consent.

b. Natural Streambed and Land Preservation Standards (Applicable)

Sections 87-5-502 and 504, MCA, (Applicable -- substantive provisions only) provide that a state agency or subdivision shall not construct, modify, operate, maintain or fail to maintain any construction project or hydraulic project which may or will obstruct, damage, diminish, destroy, change, modify, or vary the natural existing shape and form of any stream or its banks or tributaries in a manner that will adversely affect any fish or game habitat. The requirement that any such project must eliminate or diminish any adverse effect on fish or game habitat is applicable to the state in approving remedial actions to be conducted.

ARM 36.2.404 (Applicable) establishes minimum standards which would be applicable if a remedial action alters or affects a streambed, including any channel change, new diversion, riprap or other streambank protection project, jetty, new dam or reservoir or other commercial, industrial or residential development. No such project may be approved unless reasonable efforts will be made consistent with the purpose of the project to minimize the amount of stream channel alteration, insure that the project will be as permanent a solution as possible and will create a reasonably permanent and stable situation, insure that the project will pass anticipated water flows without creating harmful erosion upstream or downstream, minimize turbidity, effects on fish and aquatic habitat, and adverse effects on the natural beauty of the area and insure that streambed gravels will not be used in the project unless there is no reasonable alternative. Soils erosion and

sedimentation must be kept to a minimum. Such projects must also protect the use of water for any useful or beneficial purpose. See § 75-7-102, MCA.

6. MONTANA ACTION SPECIFIC REQUIREMENTS

c. Water Quality

Section 85-2-505, MCA, (Applicable) precludes the wasting of groundwater. Any well producing waters that contaminate other waters must be plugged or capped, and wells must be constructed and maintained so as to prevent waste, contamination, or pollution of groundwater.

d. Air Quality

i. Air Quality Regulations (Applicable) (Excavation/earth-moving; transportation)

Dust suppression and control of certain substances likely to be released into the air as a result of earth moving, transportation and similar actions may be necessary to meet air quality requirements. Certain ambient air standards for specific contaminants and particulates are set forth in the federal action specific section above. Additional air quality regulations under the state Clean Air Act, §§ 75-2-101 et seq., MCA, are discussed below.

ARM 17.8.308 (1) and (2) and 17.8.304 (Applicable) provides that no person shall cause or authorize the production, handling, transportation or storage of any material; or cause or authorize the use of any street, road, or parking lot; or operate a construction site or demolition project, unless reasonable precautions to control emissions of airborne particulate matter are taken. Emissions of airborne particulate matter must be controlled so that they do not "exhibit an opacity of twenty percent (20%) or greater averaged over six consecutive minutes."

In addition, state law provides an ambient air quality standard for settled particulate matter. Particulate matter concentrations in the ambient air shall not exceed the following 30-day average: 10 grams per square meter. ARM 17.8.220 (Applicable).

ARM 17.8.308(4) (Applicable) requires that any new source of airborne particulate matter that has the potential to emit less than 100 tons per year of particulates shall apply best available control technology (BACT); any new source of airborne particulate matter that has the potential to emit more than 100 tons per year of particulates shall apply lowest achievable emission rate (LAER). The BACT and LAER standards are defined in ARM 17.8.301.

ARM 17.24.761 (Applicable) specifies a range of measures for controlling fugitive dust emissions during mining and reclamation activities. Some of these measures could be considered relevant and appropriate to control fugitive dust emissions in connection with excavation, earth moving and transportation activities conducted as part of the remedy at the site. Such measures include, for example, paving, watering, chemically stabilizing, or frequently compacting and scraping

roads, promptly removing rock, soil or other dust-forming debris from roads, restricting vehicle speeds, revegetating, mulching, or otherwise stabilizing the surface of areas adjoining roads, restricting unauthorized vehicle travel, minimizing the area of disturbed land, and promptly revegetating regraded lands.

e. Solid Waste Regulations

Solid Waste Management Regulations are applicable to the management of the tailings and similar wastes within this Site. Certain of these regulations are identified in the state Location Specific ARARs above. Other applicable requirements are discussed here.

ARM 17.50.505(2) (Applicable) specifies standards for solid waste management facilities, including the requirements that:

1. if there is the potential for leachate migration, it must be demonstrated that leachate will only migrate to underlying formations which have no hydraulic continuity with any state waters;

2. adequate separation of such wastes from underlying or adjacent water must be provided, considering terrain, type of underlying soil formations, and facility design; and

3. no new disposal units or lateral expansions may be located in wetlands.

ARM 17.50.523 (Applicable) requires that such waste must be transported in such a manner as to prevent its discharge, dumping, spilling, or leaking from the transport vehicle.

Section 75-10-206, MCA, (Applicable) allows variances to be granted from solid waste regulations if failure to comply with the rules does not result in a danger to public health or safety or compliance with specific rules would produce hardship without producing benefits to the health and safety of the public that outweigh the hardship. In light of the nature of the wastes at issue and the likelihood that any repository would contain only a single type of waste, i.e. tailings and related materials, many of the Solid Waste Regulations regarding design of landfills, ARM 17.50.506, operational and maintenance requirements, ARM 17.50.510-511, and landfill closure requirements and post-closure care, ARM 17.50.530-531, may appropriately be subject to variance in selecting and implementing a remedy at this Site.

f. Reclamation Requirements

i. <u>Reclamation Activities - Hydrology Regulations (Applicable)</u>
(Excavation, earth moving, altering drainage patterns)

The hydrology regulations promulgated under the Strip and Underground Mine Reclamation Act, §§ 82-4-201 et seq., MCA, provide detailed guidelines for addressing the hydrologic impacts of mine reclamation activities and earth moving projects and are applicable for addressing these impacts in the McLaren Tailings Site.

ARM 17.24.631 (Applicable) provides that long-term adverse changes in the hydrologic balance from mining and reclamation activities, such as changes in water quality and quantity, and location of surface water drainage channels shall be minimized. Water pollution must be minimized and, where necessary, treatment methods utilized. Diversions of drainages to avoid contamination must be used in preference to the use of water treatment facilities. Other pollution minimization devices must be used if appropriate, including stabilizing disturbed areas through land shaping, diverting runoff, planting quickly germinating and growing stands of temporary vegetation, regulating channel velocity of water, lining drainage channels with rock or vegetation, mulching, and control of acid-forming, and toxic-forming waste materials.

ARM 17.24.633 (Applicable) states that all surface drainage from a disturbed area must be treated by the best technology currently available (BTCA). Treatment must continue until the area is stabilized.

ARM 17.24.634 (Applicable) provides that, in reclamation of drainages, drainage design must emphasize channel and floodplain dimensions that approximate the premining configuration and that will blend with the undisturbed drainage above and below the area to be reclaimed. The average stream gradient must be maintained with a concave longitudinal profile. This regulation provides specific requirements for designing the reclaimed drainage to:

1. meander naturally;

2. remain in dynamic equilibrium with the system;

3. improve unstable premining conditions;

4. provide for floods; and

5. establish a premining diversity of aquatic habitats and riparian vegetation.

ARM 17.24.635 through 17.24.637 (Applicable) set forth requirements for temporary and permanent diversions.

ARM 17.24.640 (Applicable) provides that discharge from sedimentation ponds, permanent and temporary impoundments, and diversions shall be controlled by energy dissipaters, riprap channels, and other devices, where necessary, to reduce erosion, prevent deepening or enlargement of stream channels, and to minimize disturbance of the hydrologic balance.

ii. Reclamation and Revegetation Requirements (Applicable) (Excavation)

ARM 17.24.501 and 501A (Applicable) give general backfilling and final grading requirements.

ARM 17.24.504 (Applicable) provides that permanent impoundments that meet the requirements of ARM 17.24.642 may be retained in mined and reclaimed sites, provided that all highwalls are eliminated by grading to appropriate contours and the postmining land use and protection of hydrologic balance provisions are satisfied. No impoundments may be constructed on top of areas in which excess materials are deposited.

ARM 17.24.514 (Applicable) sets out contouring requirements.

ARM 17.24.519 (Applicable) provides that an operator may be required to monitor settling of regraded areas.

ARM 17.24.520 (Applicable) provides that spoil material may be placed in a controlled (engineered) manner in a disposal area other than the mine workings or excavations. Also provides various other relevant requirements, including, but not limited to, those for water protection, i.e., that leachate and surface runoff from the fill must not degrade surface or ground waters or exceed effluent limitations.

ARM 17.24.638 (Applicable) specifies sediment control measures to be implemented during operations.

ARM 17.24.641 (Applicable) provides that drainage from acid- and toxic-forming spoil into ground and surface water must be avoided by several enumerated means, all of which are relevant.

ARM 17.24.642 (Applicable) prohibits permanent impoundments except under certain circumstances. Also provides other construction requirements for embankments, dams and diversion ditches.

ARM 17.24.643-646 (Applicable) provides for protection of groundwater and groundwater recharge, and provides requirements for monitoring surface and groundwater.

ARM 17.24.650 (Applicable) provides for postmining rehabilitation of sedimentation ponds, diversion, impoundments and treatment facilities before abandonment of the permit area.

ARM 17.24.702 (Applicable) requires that during the redistributing and stockpiling of soil (for reclamation):

1. regraded areas must be deep-tilled, subsoiled, or otherwise treated to eliminate any possible slippage potential, to relieve compaction, and to promote root penetration and permeability of the underlying layer; this preparation must be done on the contour whenever possible and to a minimum depth of 12 inches;

2. redistribution must be done in a manner that achieves approximate uniform thicknesses consistent with soil resource availability and appropriate for the postmining vegetation, land uses, contours, and surface water drainage systems; and

3. redistributed soil must be reconditioned by subsoiling or other appropriate methods.

ARM 17.24.703 (Applicable) When using materials other than, or along with, soil for final surfacing in reclamation, the operator must demonstrate that the material (1) is at least as capable as the soil of supporting the approved vegetation and subsequent land use, and (2) the medium must be the best available in the area to support vegetation. Such substitutes must be used in a manner consistent with the requirements for redistribution of soil in ARM 26.4.701 and 702.

ARM 17.24.711 (Applicable) requires that a diverse, effective, and permanent vegetative cover of the same seasonal variety native to the area of land to be affected shall be established except on road surfaces and below the low-water line of permanent impoundments. Vegetative cover is considered of the same seasonal variety if it consists of a mixture of species of equal or superior utility when compared with the natural (or pre-existing) vegetation during each season of the year. (See also ARM 17.24.716 below regarding substitution of introduced species for native species.)

ARM 17.24.713 (Applicable) provides that seeding and planting of disturbed areas must be conducted during the first appropriate period for favorable planting after final seedbed preparation but may not be more than 90 days after soil has been replaced.

ARM 17.24.714 (Applicable) requires use of a mulch or cover crop or both until an adequate permanent cover can be established. Use of mulching and temporary cover may be suspended under certain conditions.

ARM 17.24.716 (Applicable) establishes the required method of revegetation, and provides that introduced species may be substituted for native species as part of an approved plan.

ARM 17.24.718 (Applicable) requires the use of soil amendments and other means such as irrigation, management, fencing, or other measures, if necessary to establish a diverse and permanent vegetative cover.

ARM 17.24.720 (Applicable) requires annual state inspection of seeded areas.

ARM 17.24.721 (Applicable) requires rills and gullies forming in areas that have been regraded or resoiled must be filled, graded or otherwise stabilized and the area reseeded or replanted under certain circumstances.

ARM 17.24.723 (Applicable) requires periodic monitoring and data review of vegetation, soils, wildlife and other items at the site by the operator as prescribed or approved by the state.

ARM 17.24.724 (Applicable) provides revegetation comparison standards.

ARM 17.24.725 (Applicable) establishes commencement of the minimum period of responsibility for reestablishing vegetation.

ARM 17.24.726 (Applicable) establishes vegetation production, cover, diversity, density and utility requirements for revegetation and reclamation success.

ARM 17.24.728 (Applicable) sets forth requirements for the composition of vegetation on reclaimed areas.

ARM 17.24.730-731 (Applicable) requires season of use standards and analysis of toxicity if such toxicity is suspected due to the effects of disturbance caused by the reclamation technique.

6. OTHER LAWS (NON-EXCLUSIVE LIST)

CERCLA defines as ARARs only federal environmental and state environmental and siting laws. Remedial design, implementation, and operation and maintenance must nevertheless comply with all other applicable laws, both state and federal, if the remediation work is done by parties other than the federal government or its contractors.

The following "other laws" are included here to provide a reminder of other legally applicable requirements for actions being conducted at the McLaren Tailings Site. They do not purport to be an exhaustive list of such legal requirements, but are included because they set out related concerns that must be addressed and, in some cases, may require some advance planning. They are not included as ARARs because they are not "environmental or facility siting laws." As applicable laws other than ARARs, they are not subject to ARAR waiver provisions.

Section 121(e) of CERCLA exempts removal or remedial actions conducted entirely on-site from federal, state, or local permits. This exemption is not limited to environmental or facility siting laws, but applies to other permit requirements as well.

a. Other Federal Laws

i. Occupational Safety and Health Regulations

The federal Occupational Safety and Health Act regulations found at 29 CFR § 1910 are applicable to worker protection during conduct of RI/FS or remedial activities.

b. Other Montana Laws

i. Groundwater Act

Section 85-2-516, MCA, states that within 60 days after any well is completed a well log report must be filed by the driller with the DNRC and the appropriate county clerk and recorder.

ii. Water Rights

Section 85-2-101, MCA, declares that all waters within the state are the state's property, and may be appropriated for beneficial uses. The wise use of water resources is encouraged for the maximum benefit to the people and with minimum degradation of natural aquatic ecosystems.

Parts 3 and 4 of Title 85, MCA, set out requirements for obtaining water rights and appropriating and utilizing water. All requirements of these parts are laws which must be complied with in any action using or affecting waters of the state. Some of the specific requirements are set forth below.

Section 85-2-301, MCA, of Montana law provides that a person may only appropriate water for a beneficial use.

Section 85-2-302, MCA, specifies that a person may not appropriate water or commence construction of diversion, impoundment, withdrawal or distribution works therefor except by applying for and receiving a permit from the Montana Department of Natural Resources and Conservation. While the permit itself may not be required under federal law, appropriate notification and submission of an application should be performed and a permit should be applied for in order to establish a priority date in the prior appropriation system. A 1991 amendment imposes a fee of $1.00 per acre foot for appropriations of ground water, effective until July 1, 1993.

Section 85-2-306, MCA, specifies the conditions on which groundwater may be appropriated, and, at a minimum, requires notice of completion and appropriation within 60 days of well completion.

Section 85-2-311, MCA, specifies the criteria which must be met in order to appropriate water and includes requirements that:

1. there are unappropriated waters in the source of supply;

2. the proposed use of water is a beneficial use; and

3. the proposed use will not interfere unreasonably with other planned uses or developments.

Section 85-2-402, MCA, specifies that an appropriator may not change an appropriated right except as provided in this section with the approval of the DNRC.

Section 85-2-412, MCA, provides that, where a person has diverted all of the water of a stream by virtue of prior appropriation and there is a surplus of water, over and above what is actually and necessarily used, such surplus must be returned to the stream.

iii. Occupational Health Act, §§ 50-70-101 et seq., MCA.

ARM 17.74.101 addresses occupational noise. In accordance with this section, no worker shall be exposed to noise levels in excess of the levels specified in this regulation. This regulation is applicable only to limited categories of workers and for most workers the similar federal standard in 29 CFR § 1910.95 applies.

ARM 17.74.102 addresses occupational air contaminants. The purpose of this rule is to establish maximum threshold limit values for air contaminants under which it is believed that nearly all workers may be repeatedly exposed day after day without adverse health effects. In accordance with this rule, no worker shall be exposed to air contaminant levels in excess of the threshold limit values listed in the regulation. This regulation is applicable only to limited categories of workers and for most workers the similar federal standard in 29 CFR § 1910.1000 applies.

iv. Montana Safety Act

Sections 50-71-201, 202 and 203, MCA, state that every employer must provide and maintain a safe place of employment, provide and require use of safety devices and safeguards, and ensure that operations and processes are reasonably adequate to render the place of employment safe. The employer must also do every other thing reasonably necessary to protect the life and safety of its employees. Employees are prohibited from refusing to use or interfering with the use of safety devices.

v. Employee and Community Hazardous Chemical Information Act

Sections 50-78-201, 202, and 204, MCA, state that each employer must post notice of employee rights, maintain at the work place a list of chemical names of each chemical in the work place, and indicate the work area where the chemical is stored or used. Employees must be informed of the chemicals at the work place and trained in the proper handling of the chemicals.